

AN EPIGEAN *TYRANNOCHTHONIUS* FROM HAWAII (PSEUDOSCORPIONIDA: CHTHONIIDAE)

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Abstract. — *Tyrannochthonius swiftae* NEW SPECIES was found in Ohia litter on the island of Kauai. It is similar to *T. pupukeanus* Muchmore from the island of Oahu, but is not at all cave-adapted.

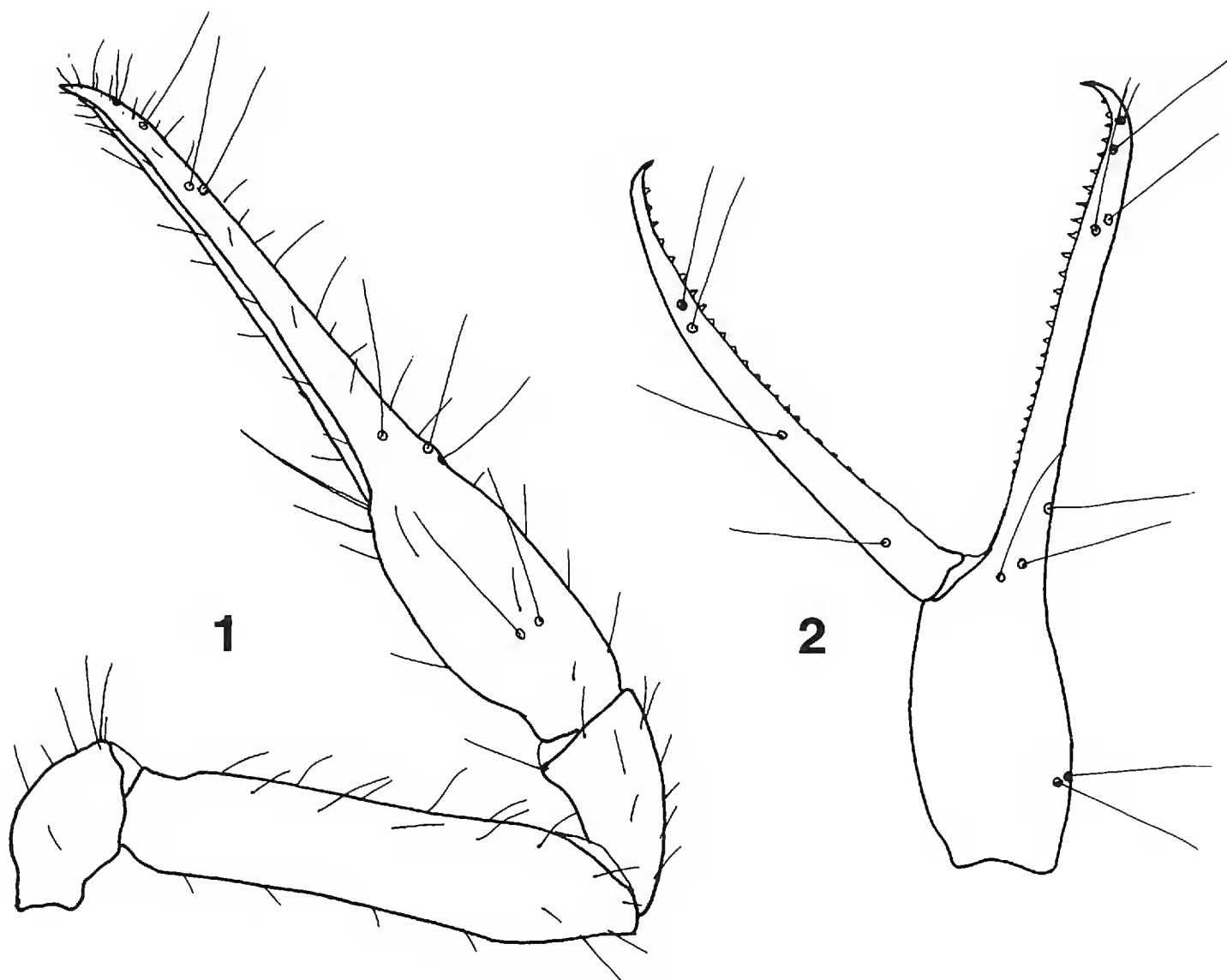
Key Words. — Arachnida, Pseudoscorpionida, Chthoniidae, *Tyrannochthonius swiftae* NEW SPECIES, epigean

Through the efforts of F. G. Howarth and his colleagues, representatives of three troglobitic species of *Tyrannochthonius* have been found in the Hawaiian islands, *T. howarthi* Muchmore (1979) from Ainahou Petroglyph Cave on Hawaii Island, *T. pupukeanus* Muchmore (1983) from Pupukea Lava Tube on Oahu Island, and *T. stonei* Muchmore (1989) from Kalu Au Au Dripping Cave on Maui Island. These species are all definitely cave-adapted, being pallid, with reduced eyes and attenuated appendages. It must be agreed that they originated from one or more epigean ancestors, but, until recently, no such “normal” *Tyrannochthonius* was known from any of the Hawaiian islands. Urged on by my repeated pleas to search for litter-dwelling pseudoscorpions by Berlese separation, Sabina Swift of the Bishop Museum has finally collected a single male of a typical, epigean species of the genus on Kauai Island; it is new and is described here.

TYRANNOCHTHONIUS SWIFTAE MUCHMORE, NEW SPECIES (Figs. 1, 2)

Type Data. — Holotype male. HAWAII: *KAUAI*: Hono O Na Pali NAR, 1305 m, Ohia soil and litter, 19 Nov 1990, collected by Sabina F. Swift. Type in the Bishop Museum, Honolulu (BPBM 15046).

Description. — *Male.* All parts straw colored. Carapace about square in dorsal view; surface smooth; epistome small, triangular, with 2 flanking setae; 4 corneate eyes; setae long and prominent; chaetotaxy d4d-4-4-2-2, the dwarf setae (d) lying anterior to eyes. Abdomen typical; tergal chaetotaxy 4:4:4:4:5:5:5:5:4:T2T:0; sternal chaetotaxy 10:[4-4]:(3)5-5/16(3):(4)6(4):10:9:9:9:8:0:2. Chelicera 0.75× as long as carapace; hand with 5 setae; flagellum of ca. 8 pinnate setae; fixed finger with ca. 8 teeth, distal one largest; movable finger with ca. 10 small teeth; galea represented by a very low elevation; serrula exterior of 19 or 20 blades. Palp rather long and slender (Fig. 1); femur 1.2× and chela 1.8× as long as carapace. Trochanter 1.65×, femur 4.4×, tibia 1.75× and chela 5.25× as long as broad; hand 1.7× as long as deep; movable finger 1.95× as long as hand. Surfaces smooth; setae slender; 1 prominent long, heavy seta on medial side of chelal hand at base of fixed finger. Trichobothria as shown in Fig. 2; *sb* slightly nearer to *st* than to *b*. Fixed finger with 27 spaced teeth, tall and sharp distally, low and rounded proximally, and with 1 or 2 intercalated microdenticles distally; movable finger with 15 pointed teeth and 8 low rounded denticles proximally, and no microdenticles. Legs generally typical, but rather robust; apex of coxa I with a prominent rounded projection; coxal chaetotaxy 2-2-1:3-0:2-2(1)-CS:2-3:2-3; setae on apex of palpal coxa long, subequal; each coxa II with 7 or 8 terminally incised coxal spines (CS). Leg IV with entire femur 2.45 and tibia 4.1× as long as deep; tactile setae on tibia and both tarsi. *Measurements.* Body length 1.45 mm. Carapace length 0.435 mm. Chelicera length 0.33 mm. Palpal trochanter 0.18/0.11 mm; femur 0.53/0.12 mm; tibia 0.22/0.125 mm; chela



Figures 1, 2. *Tyrannochthonius swiftae* NEW SPECIES. Figure 1. Dorsal view of right palp. Figure 2. Lateral view of left chela.

0.79/0.15 mm; hand 0.265/0.155 mm; movable finger 0.52 mm long. Leg IV: entire femur 0.495/0.205 mm; tibia 0.33/0.08 mm.

Female.—Unknown.

Diagnosis.—A small species in the Hawaiian fauna, about the same size as *T. pupukeanus*, from which it differs in having four definitely corneate eyes and more robust appendages (palpal femur L/B = 4.4, compared with 4.8-5.15 for *T. pupukeanus*).

Etymology.—The species is named for S. Swift, who collected the type specimen.

Distribution.—Known only from the type locality.

Remarks.—The discovery of the specimen described above confirms the presence of epigeal *Tyrannochthonius* in Hawaii. Continued search of the litter fauna will undoubtedly turn up representatives of the genus on all of the major islands.

Epigeal species of *Tyrannochthonius* are known from various islands in the Pacific Ocean west of Hawaii, the nearest being Japan, Guam, New Guinea, Solomon Islands, New Caledonia, and Kermadec. *Tyrannochthonius swiftae* is larger than most of those species, but about the same size as *T. japonicus* (Ellingsen), from which it differs in having a distinct epistome and more slender appendages.

It is interesting that no *Tyrannochthonius* species is yet known from Pacific islands directly south or east of Hawaii until the Galapagos Islands, and none has

been reported from the eastern shore of the Pacific as far south as Colombia. This is probably due in large part to lack of collecting and study.

Material Examined.—See types.

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